

Amendments to the Abstract:

Please amend the abstract, pages 64-65, by replacing it with the following amended Abstract.

ABSTRACT

**FACILITATING PROTEIN FOLDING AND SOLUBILITY
BY USE OF PEPTIDE EXTENSIONS**

~~Disclosed herein are~~ The present invention comprises novel compositions and methods for enhancing the solubility and promoting the adoption of native folding conformation of ~~a~~ proteins or polypeptides of interest expressed by recombinant DNA techniques. In one ~~One~~ embodiment of the present invention ~~relates to a~~ the protein or polypeptide of interest is modified through either a carboxyl- or an amino-terminal peptide extension, so as to promote folding within host cells. ~~Another~~ In another embodiment the peptide-extended protein or polypeptide of interest is recovered in good 10 yield from inclusion bodies by ~~relates to a method for enhancing the~~ *in vitro* renaturation ~~of a protein or polypeptide of interest expressed by recombinant DNA techniques, in~~ circumstances where, following expression, a substantial percentage of the expressed ~~protein or polypeptide of interest is localized within inclusion bodies. Yet another~~ embodiment of the ~~The present invention relates to an~~ further includes expression vectors comprising a nucleic acid sequence encoding a peptide extension and a multiple cloning site for inserting, in-frame with the peptide extension sequence, a nucleic acid sequence encoding a protein or polypeptide of interest. The peptide extensions of the present

invention comprise ~~different amino acid sequences and intrinsic net charges, depending~~
20 ~~upon the specific species. The total length of the peptide extensions comprise peptides of~~
~~61 amino acid residues or less, whereas the said peptides having net intrinsic charges of~~
~~the peptide extensions range from about -20 to about -2 and or from about -20 to about~~
~~+2, for peptide extensions fused to carboxyl and or amino-termini, respectively. Primary~~
~~objectives of the present invention include: (i) enhancing the solubility, while~~
~~concomitantly optimizing the folding, of proteins of interest into their biologically active~~
~~conformations in host cells; (ii) characterizing the features of the carboxyl and amino-~~
~~terminal peptide extension that are necessary for their protein folding activity within host~~
~~cells; (iii) determining whether these carboxyl and amino terminal peptide extensions~~
~~can promote renaturation of mis folded proteins *in vitro*; and (iv) identifying protein~~
30 ~~characteristics which determine behavior of the protein as a substrate for the peptide~~
~~extension mediated folding described herein.~~